INTRODUCTION

Thrombocytopenia is a common clinical problem found in laboratory results . It can be inherited or acquired. The normal platelet count in adult ranges from 150,000 to 450,000/µl.Values outside this range do not necessarily indicate disease. Spontaneous bleeding does not became evident until platelet count falls below 20,000. Platelet count in range of 20,000 to 50,000 platelet/µl can aggravate post traumatic bleeding. Bleeding resulting from thrombocytopenia is associated with normal prothrombin time and activated partial thromboplastin time.

MATERIAL AND METHODS

The study was conducted in first 100 patients of 2022 who presented with persistent thrombocytopenia for more than 2 weeks in tertiary care hospital. Detailed clinical findings of patients were noted regarding duration of illness, weakness, loss of appetite and weight, significant family history and any history of drug intake or blood transfusion in the past were taken. This was followed by general physical examination and systemic examination. Routine hematological

investigations like CBC were performed using automated cell counter.The peripheral blood film and Bone marrow aspiration slides were processed routinely and stained with may grunwald giemsa stain. Stained slides were examined and findings noted.

RESULTS

A total of 100 cases were included in our study and categorized into neoplastic and non-neoplastic.

TABLE 1:Showing category wise distribution on patients

S.NO.	Category	No.of patients
1	Neoplastic	42
2	Non-neoplastic	58
3	Total	100

Age distribution of patient varied over a wide range from newborn to 82 years

Males were slightly more commonly involved than females.

TABLE 2: Showing sex distribution of patients

S.NO	SEX	NO OF PATIENTS
1	Male	53
2	Female	47

Total		100

The most prevalent clinical presentation was generalized weakness(80%) followed by progressive pallor(50%) and fever(40%)

TABLE 3: Showing clinical presentation in patients of thrombocytopenia

S.no	**Clinical presentation**	**Number of cases**
1	Generalized weakness	80
2	Progressive pallor	50
3	Fever	40
4	Bleeding	25
5	Shortness of breath	20
6	Organomegaly	20
7	Lymphadenopathy	10
8	Loose stools	9
9	Pain abdomen	8
10	Icterus	2

Most common neoplastic condition was acute leukemia and non neoplastic conditions was megaloblastic anemia.

S.NO	DIAGNOSIS	Number of cases
	NEOPLASTIC	
1	Acute myeloid leukemia	15
2	Acute lymphoblastic leukemia	14
3	Chronic myeloid leukemia	1
4	Plasma cell dyscrasia	1
5	Juvenile myelomonocytic leukemia	1
6	Chronic lymphocytic leukemia	1
7	Mets of adenocarcinoma	1
	NON NEOPLASTIC	
8	Megaloblastic anemia	45

9	Dual deficency	8
10	ITP	7
11	Aplastic anemia	3

Lowest platelet count of 6,000 was seen in 67 year old patient suffering from metastasis who presented with fever,cough, petechie followed by second lowest count of 8,000 in patient of immune thrombocytopenic purpura who presented with bleeding from multiple sites.

In most of patients, the size of platelets was normal. Megathrombocytes (giant platelets) were noted in patients with megaloblastic anemia, chronic myeloid leukemia and microthrombocytes(microplatelets) noted in myelodysplastic syndrome.

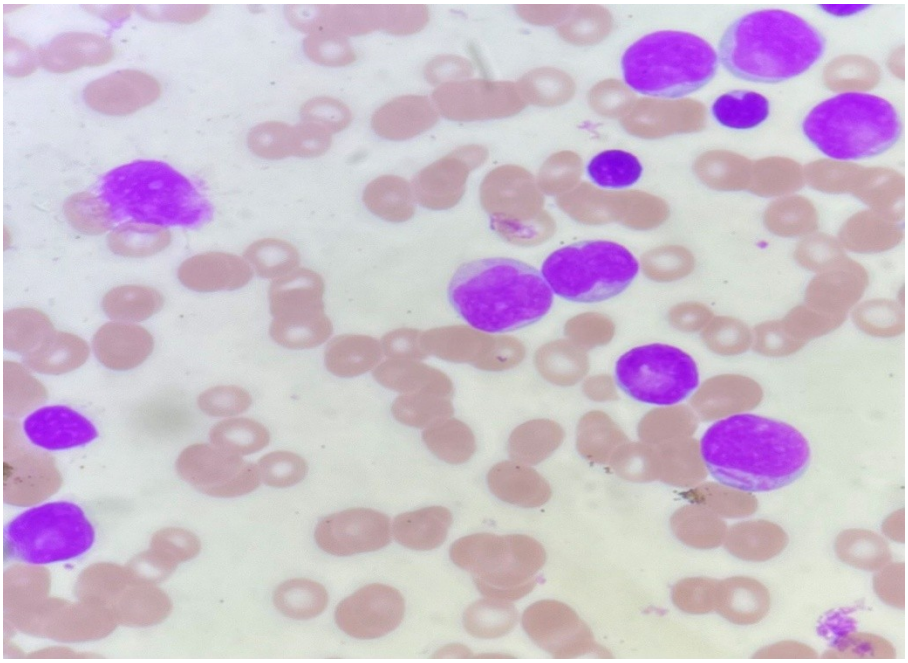

FIGURE 1: PBF showing myeloblast and decreased platelets in AML

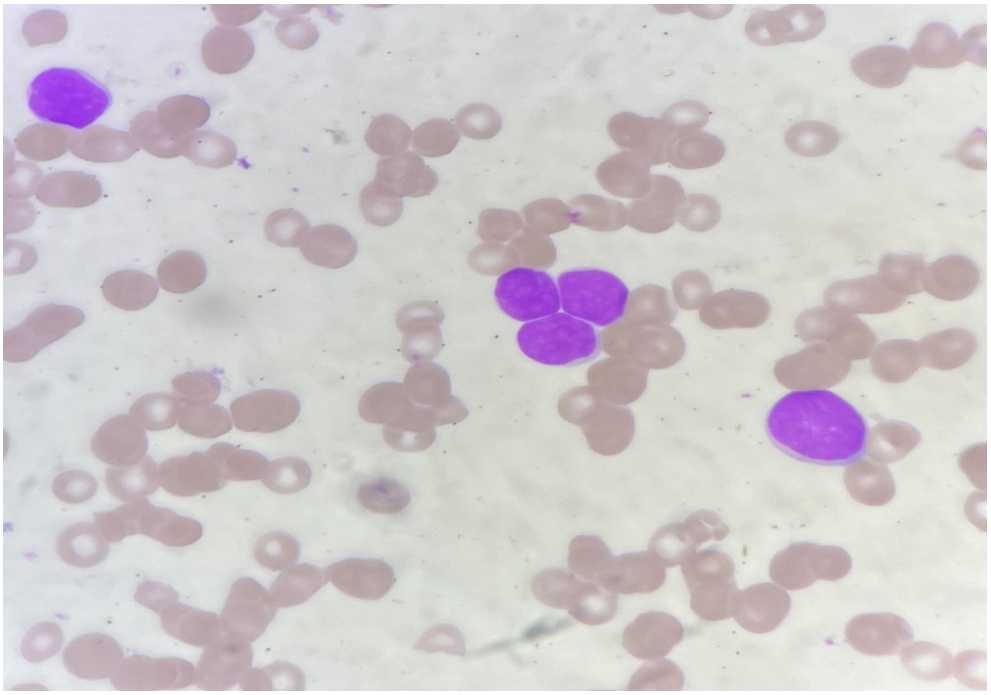

FIGURE 2: PBF showing lymphoblast and decreased platelets in ALL

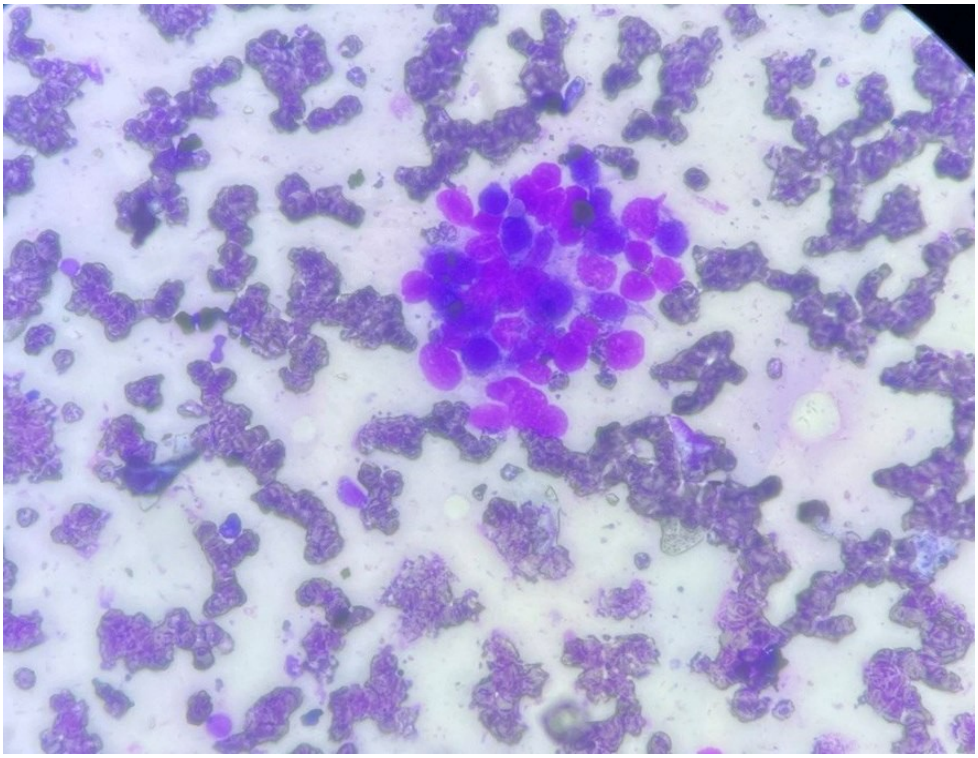

FIGURE 3: Diluted bone marrow showing deposits of adenocarcinoma and reduced megakaryocytes

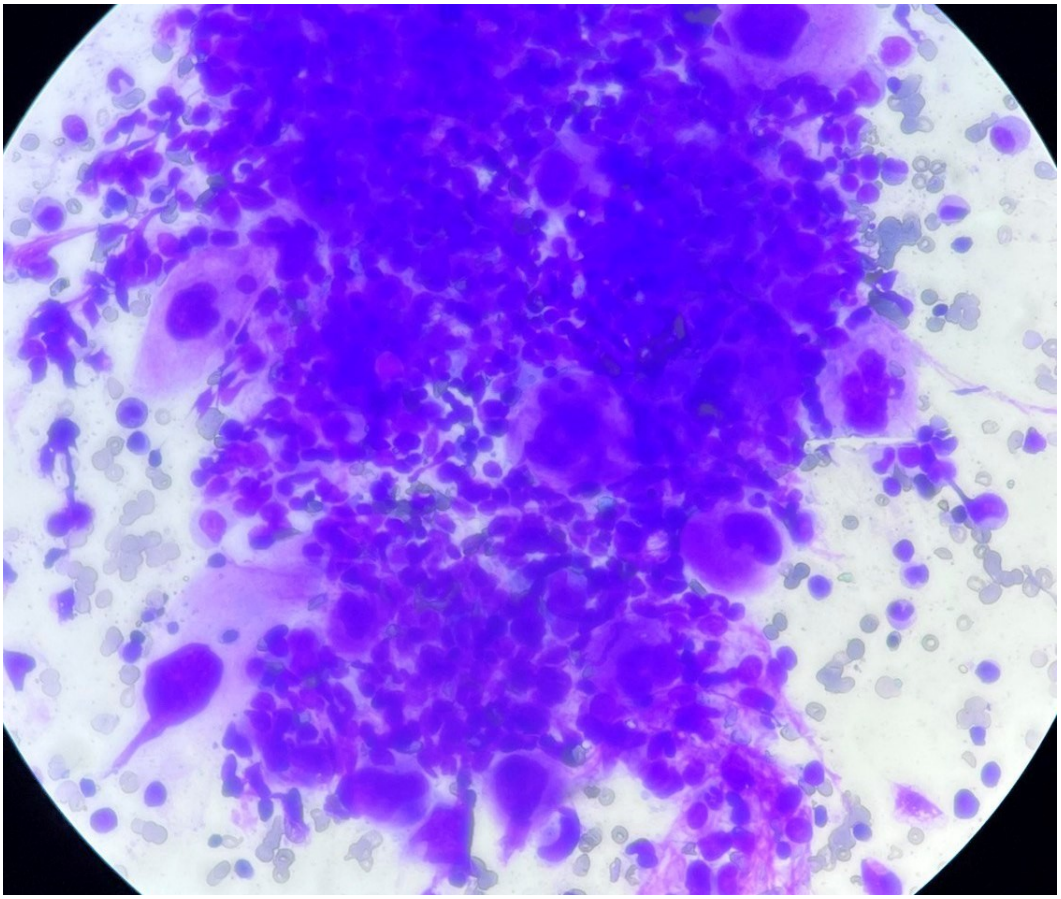

FIGURE 4: Bone marrow showing increased number of megakaryocytes in ITP

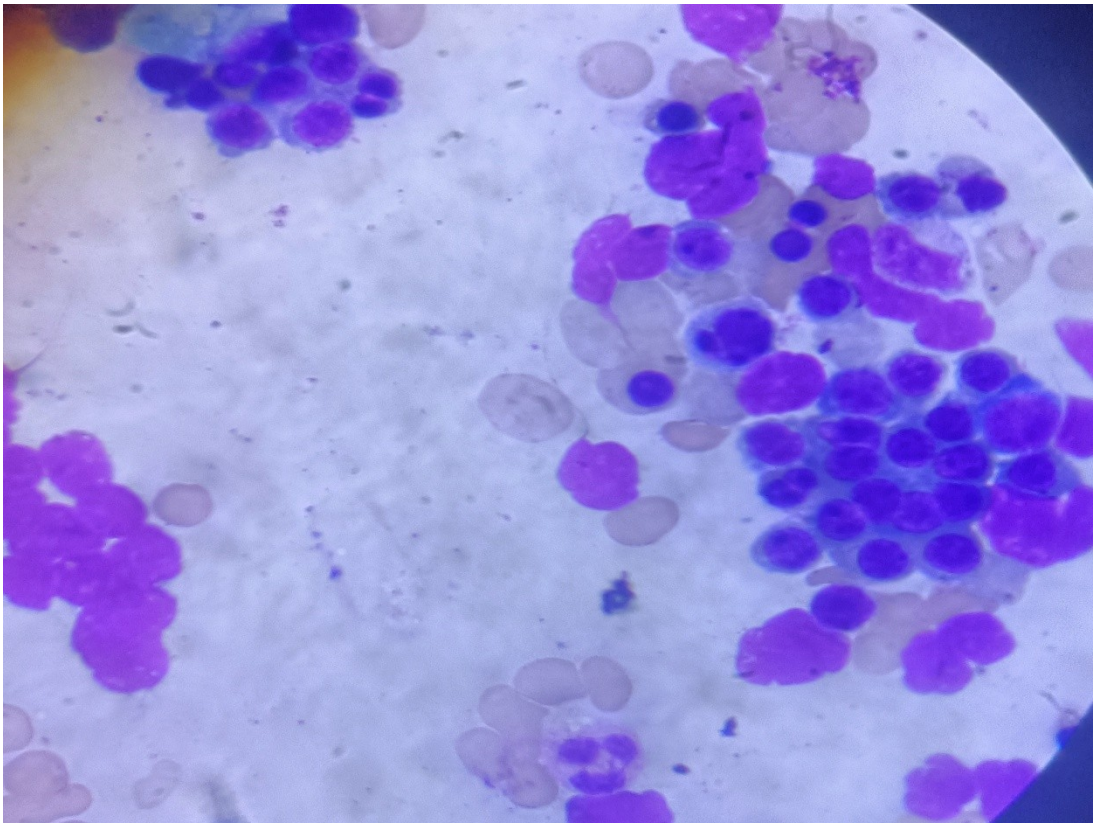

FIGURE 5: Bone marrow showing increased erythroid precursors in megaloblastic anemia and decreased megakaryocytes.

DISCUSSION

In our study the age of patients ranged from 9 months to 83 years.Thrombocytopenia was observed more in males(53) than females(47) with male to female ratio of1.18:1 .
Most common clinical presentation was generalized weakness followed by progressive pallor, fever, bleeding tendencies. Similarly santra and das et al (8) found weakness in 45%, fever in 50.4% and bleeding tendencies in 41.4% cases.
In present study, their was 29% incidence of acute leukemia (15% incidence of AML and 14% incidence of ALL) compared with 32% reported by Kumar R et al(12).In these cases , thrombocytopenia was associated with anemia and leukocytosis with many blast cells.
Out of 100 cases of thrombocytopenia, ITP was found in 7 cases, both PBF and CBC findings especially platelet parameters correlated well with bone marrow findings. All the cases showed peripheral isolated thrombocytopenia with increased megakaryocytes.
Megaloblastic anemia was seen in 45 patients. Bone marrow study showed erythroid hyperplasia with megaloblastic

erythropoiesis.Giant stab forms and related megaloblastic changes in megakaryocytes were also seen. Peripheral thrombocytopenia was associated with characteristic CBC and peripheral smear findings.
One case of CML was also having peripheral blood thrombocytopenia and granulocytosis.
One case of juvenile myelomonocytic leukemia –adult type was diagnosed having leucocytosis and thrombocytopenia and anemia.
One case of metastasis of bone marrow with adenocarcinoma was seen which develop peripheral blood thrombocytopenia and anemia.

If clinical details are complete, CBC parameters along with careful examination of peripheral blood film in these patients are very helpful in predicting the diagnosis in most of the patients and in these cases, bone marrow aspiration and biopsy can be avoided/deffered.
We also found that bleeding is not a very common finding in thrombocytopenia and few patients with very low platelet count had no bleeding manifestations. Platelet transfusion

is not necessary in patients of thrombocytopenia who presented without any bleeding manifestations .

CONCLUSION

Here we conclude from our study that clinical history, complete examination of the patient along with routine haematological investigations including PBF and CBC combined with bone marrow aspiration and bone marrow biopsy in certain cases, biochemical, radiological and serological examination are important in diagnosing the cases presenting with thrombocytopenia either isolated or combined with other cytopenias. Hence in all cases of thrombocytopenia, detailed clinical examination should be done after taking complete history and these patients should be subjected to CBC and PBF examination which will provide clue to the underlying disorder and one can plan accordingly for further investigations if necessary like bone marrow aspiration and bone marrow trephine biopsy and other related investigations.This protocol will help in providing early diagnosis,

treatment and also minimize patients stay in hospital, cost and above all patients agony.

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